Claims:

1. A method for culturing embryoid bodies from embryonic stem cells comprising:
-obtaining embryonic stem cells;
-culturing the embryonic stem cells to induce formation of embryoid bodies;
-isolating the embryoid bodies;
-casting the embryoid bodies in a three-dimensional scaffolding material and a cell culture medium; and
-growing the embryoid bodies in the three-dimensional scaffolding material and cell culture medium.

2. The method of claim 1 further comprising an additional culturing step between the obtaining step and the culturing step, wherein the additional culturing step comprises culturing the embryonic stem cells in a monolayer culture.

3. The method of claim 2, wherein the monolayer culture is performed in a culture medium of knock out DMEM and about 20% ES qualified fetal bovine serum.

4. The method of claim 1, where the culturing step is performed by suspension culture or by hanging drop culture.

5. The method of claim 4, wherein the suspension culture or hanging drop culture is performed in a culture medium of knock out DMEM and about 20% ES qualified fetal bovine serum.

6. The method of claim 1, wherein the isolating step is performed by centrifugation.

7. The method of claim 1, wherein the three-dimensional scaffolding material is albumin, collagen, gelatin, hyaluronic acid, starch, alginate, pectin, cellulose or cellulose derivatives (such as methylcellulose, hydroxypropylcellulose,

hydroxypropylmethylcellulose, carboxy-methylcellulose, cellulose acetate phthalate, cellulose acetate succinate, hydroxypropylmethylcellulose phthalate), casein, dextran, polysaccharides (such as sucrose acetate isobutyrate), or fibrinogen.

8. The method of claim 7, wherein the three-dimensional scaffolding material is collagen used at a concentration of about 0.5 mg/ml to about 5.0 mg/ml.

9. The method of claim 8, wherein the collagen is native type I collagen.

10. The method of claim 1, wherein the cell culture medium of the adding step is DMEM and about 20% ES qualified fetal bovine serum and the three-dimensional scaffolding material is collagen at a concentration of about 0.4 mg/ml to about 1.0 mg/ml.

11. The method of claim 1, further comprising the step of inducing differentiation of the embryoid bodies to produce fibroblasts after the growing step.

12. The method of claim 11, wherein the inducing step comprises adding a cytokine to the three-dimensional embryoid body culture.

13. The method of claim 12, wherein the cytokine is vascular endothelial growth factor (VEGF); vascular permeability factor (VPF); members of the fibroblast growth factor family (FGF); members of the interleukin family (IL-1α, and -1β, -2, -3, -4, -5, -6, -7, -8, -9,-10,-11,-12,-13,-14,-15,-16,-17 or -18); epidermal growth factor (EGF); platelet-derived growth factor (PDGF); platelet-derived endothelial cell growth factor (PD-ECGF); transforming growth factors alpha and beta (TGF-α, TGF-β); tumor necrosis factor alpha (TNF α); hepatocyte growth factor (HGF); granulocyte-macrophage colony stimulating factor (GMCSF); insulin growth factor-1 (IGF-1); angiogenin; angiotropin; fibrin, nicotinamide; macrophage inflammatory protein (MIP); macrophage migration inhibiting factor (MIF); granulocyte stimulating factor (GCSF); macrophage stimulating factor (MCSF); endothelial cell growth factor (ECGF); members of the interferon family (IFNs); members of the insulin-like growth factor family (IGF-I and IGF-II); nerve growth factor (NGF); members of the

neurotrophin family (NTs); members of the selectin family; intercellular adhesion molecule (ICAM); platelet vascular cell adhesion molecule (PECAM); vascular cell adhesion moleculre (VCAM); calcitonin, mediators, hormones or hirudin.

14. The method of claim 13, wherein the cytokine is transforming growth factor beta (TGF-β); fibroblast growth factor (FGF); or interleukin 4 (IL-4).

15. The method of claim 12, wherein the inducing step further comprises adding a cell culture medium comprising about 2% ES qualified fetal bovine serum.

16. The method of claim 11, further comprising the steps of;
-isolating the differentiated cells from the three-dimensional scaffolding material; and
-culturing the differentiated cells in monolayer culture;
after the inducing step.

17. The method of claim 16, wherein the isolating step is performed by digesting the three-dimensional scaffolding material and by centrifugation.

18. The method of claim 16, wherein the monolayer culture includes a culture medium of knock out DMEM and about 10% ES qualified fetal bovine serum.

19. The method of claim 12, wherein the inducing step includes adding FGF, TGF-b1 or IL-4 to the medium.

20. A differentiated fibroblast cultured by the method of claim 16.

21. A method of screening a compound for activity or cytotoxicity comprising combining the compound with the differentiated cell of claim 16 and determining any activity or cytotoxicity of the compound.

22. An embryoid body cultured by the method of claim 1.